

Appl. No : 09/692,655
Filed : October 19, 2000

Claim 26 was rejected under 35 U.S.C. § 112, first paragraph. Applicant has amended Claim 26 in order to clarify the language of that claim. Applicant submits that Claim 26, as amended, is in condition for allowance.

Response to Claim Rejections - 35 U.S.C. § 102

Claims 1, 2, 4-6, 8-15, and 18-31 have been rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,502,940 to Fifield, U.S. Patent No. 5,442,888 to Ilnykyj, and French Patent No. 2583-091 to Matorell.

Fifield teaches a lightweight composite roofing element comprising a first layer of an aggregate based material and a second layer of lesser density such as polystyrene. The second layer is generally taught as being a pre-formed polystyrene base including dovetail channels (Fig. 7) into which the concrete may flow as the roofing element is formed. Thus, the element identified in the Office Action as a "support element" (2) is in fact an integral portion of the roofing element taught by that reference. By contrast, the support element shown and described in the preferred embodiments of the present application is taught as being a unique element usable with a wide variety of concrete and other aggregate-based roof tiles.

Ilnykyj teaches a roofing shingle formed from a piece of sheet metal. The shingle support (60) is specifically sized and shaped for use with the particular sheet metal shingle shown and described therein. Ilnykyj describes the size and shape of the shingle support with specific reference to portions of a single sheet metal shingle described therein, thus each shingle is taught as having a unique support adhered thereto. By contrast, the support element shown and described in the preferred embodiments of the present application is configured to be used with roof tiles having a wide variety of shapes and sizes. Additionally, a single support element as taught in the preferred embodiments of the present application may be sized to underlie a plurality of roof tiles.

Matorell teaches a plate for providing acoustic and thermal insulation between a roof tile and a roofing surface. The arrangement illustrated in Figure 4 of Matorell is a representation of one of the problems which the present invention was designed to solve. Specifically, the plate shown and described in Matorell does not provide any structure for supporting a roof tile under a central portion. The lack of support provides a weakness at the

Appl. No : **09/692,655**
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un-supported portion of the tile when the roof is walked on. The fact that a space is shown between a first and second tile, is clearly not intended to suggest that a tile would be supported in such a position, as there is no structure by which to accomplish this.

Applicant respectfully submits that the claims as currently presented contain combinations of limitations not taught or suggested in the prior art of record.

In particular, Claim 1, as amended, recites:

1. An apparatus adapted for use with roof tiles and a roofing surface, comprising a support element configured to occupy a space between roof tiles and a roofing surface thereby providing support for at least central portions of the roof tiles, wherein the support element has a length of about four feet, a width of between about seven and a half and eleven inches, and a height of between about one inch and about two inches, such that the support element is sized and adapted to support at least three roof tiles of any shape or size in a single course, and wherein the support element is non-integral with the tile or the roofing surface.

Applicant respectfully submits that the prior art of record is completely absent any teaching or suggestion of a support element "sized and adapted to be used with roof tiles of any shape or size." For at least these reasons, Applicant respectfully submits that Claim 1 is in condition for allowance, and thus Applicant respectfully requests that the rejection be withdrawn.

Claims 2 and 4-6 are dependent on Claim 1, and contain the unique combinations of limitations recited therein as well as additional combinations of limitations also not taught or suggested by the prior art of record. Thus Applicant respectfully requests that the rejections of Claims 2 and 4-6 be withdrawn.

Applicant further submits that Claim 8, as amended, recites a unique combination of limitations also not taught or suggested by the prior art of record. Claim 8, as amended, recites:

8. A roof tile support system, comprising:
a roofing surface;
a plurality of roof tiles; and

a plurality of independent support elements positioned between and in contact with both of said roofing surface and said roof tiles, wherein said support elements support said roof tiles so as to increase the load capacities of said roof tiles, and wherein each support element is configured to support at least three roof tiles of any shape in a single course.

Appl. No : 09/692,655
Filed : October 19, 2000

Applicant submits that the prior art of record fails to teach or suggest a roof tile support system as recited in Claim 8 as amended. Thus, Applicant respectfully requests that the rejection be withdrawn.

Claims 9-15 and 18-22 are dependent on Claim 8, and contain the unique combinations of limitations recited therein as well as additional combinations of limitations also not taught or suggested by the prior art of record. Thus Applicant respectfully requests that the rejections of Claims 9-16 and 18-22 be withdrawn.

Additionally, Applicant submits that Claim 23, as amended, recites a unique combination of limitations also not taught or suggested by the prior art of record. Claim 10, as amended, recites:

23. A method of installing roof tile supports, comprising:
first, placing a support element on a roofing surface;
then, placing a first roof tile on said support element such that at least a central portion of an underside of said roof tile is substantially supported by the support element; and
finally, securing said roof tile to said roofing surface.

Applicant respectfully submits that the prior art of record does not teach or suggest the method of Claim 23, nor would the method have been inherent in the normal use of any of the devices described therein. Thus, Applicant respectfully requests that the rejection of Claim 23 be withdrawn.

Claims 24-31 are dependent on Claim 23, and contain the unique combinations of limitations recited therein as well as additional combinations of limitations also not taught or suggested by the prior art of record. Thus Applicant respectfully requests that the rejections of Claims 24-31 be withdrawn.

New Claims

New Claims 32-37 have been added to more clearly and completely describe the invention and to speed prosecution. Applicant respectfully submits that Claims 32-37 recite unique combinations of features not disclosed or suggested by the prior art of record. With respect to Claim 33, Applicant respectfully submits that the prior art does not teach or suggest a support element as recited in Claim 33. As described in the preferred embodiments of the present application, the support element is sized and configured to be used with a wide variety of roof tiles, and may be sized to underlie up to five or more tiles in a single course.

Appl. No : 09/692,655
Filed : October 19, 2000

Applicant respectfully submits that the prior art of record completely fails to teach or suggest such a support element.

CONCLUSION

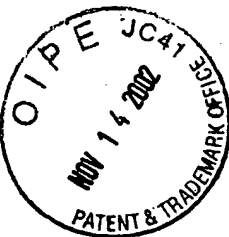
In view of the foregoing amendments and remarks, Applicant submits that this application, as amended, is in condition for allowance and such action is respectfully requested. The undersigned has made a good faith effort to respond to all of the rejections and objections in the case, and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's representative at the number indicated below in order to resolve such issues promptly.

Respectfully submitted,

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Dated: Nov. 6, 2002

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Appl. No : 09/692,655
Filed : October 19, 2000

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 1, 8, 9, 13, 23-27, 29 and 30 have been amended as follows:

1. (AMENDED) An apparatus adapted for use with roof tiles and a roofing surface, the apparatus comprising a support element configured to occupy ~~the~~ a space between roof tiles and a roofing surface thereby providing support for at least central portions of the roof tiles, wherein the support element has a length of about four feet, a width of between about seven and a half and eleven inches, and a height of between about one inch and about two inches, such that the support element is sized and adapted to support at least three roof tiles of any shape or size in a single course, and wherein the support element is non-integral with the tile or the roofing surface.

8. (AMENDED) A roof tile support system, comprising:

a roofing surface;

~~one or more~~ a plurality of roof tiles; and

~~one or more~~ a plurality of independent support elements positioned between and in contact with both of said roofing surface and said roof tiles, wherein said support elements support said roof tiles so as to increase the load capacities of said roof tiles, and wherein each support element is configured to support at least three roof tiles of any shape in a single course.

9. (AMENDED) The roof tile support system of Claim 8, wherein said ~~roofing surface comprises a roof deck~~ support element is made of a lightweight material.

13. (AMENDED) The roof tile support system of Claim 8, wherein each of said support elements supports ~~a plurality of four or more~~ four or more roof tiles in a single course.

23. (AMENDED) A method of installing roof tile supports, comprising:

first, placing a support element on a roofing surface;

then, placing a first roof tile ~~over on~~ said support element such that at least a central portion of an underside of said roof tile is substantially supported by the support element; and

finally, securing said roof tile to said roofing surface.

Appl. No : " 09/692,655
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24. (AMENDED) The method of installing roof tile supports of Claim 23, wherein ~~said roofing surface comprises a roof deck~~ a second roof tile is placed directly on at least a portion of the support element adjacent the first roof tile.

25. (AMENDED) The method of installing roof tile supports of Claim ~~23~~ 24, wherein ~~said roofing surface comprises a roof deck with battens~~ a third tile is placed directly on the support element adjacent the second tile.

26. (AMENDED) The method of installing roof tile supports of Claim 23, wherein said first roof tile is placed ~~in contact only with~~ on said support element such that said first roof tile does not contact a roof tile in an adjacent lower course.

27. (AMENDED) The method of installing roof tile supports of Claim 23, wherein said first roof tile is placed in contact with both said roofing surface and said support element.

29. (AMENDED) The method of installing roof tile supports of Claim 23, wherein securing said first roof tile to said roofing surface comprises driving a nail through said first roof tile into said roofing surface.

30. (AMENDED) The method of installing roof tile supports of Claim 29, wherein said ~~roofing~~ nail also passes through a portion of said support element.

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